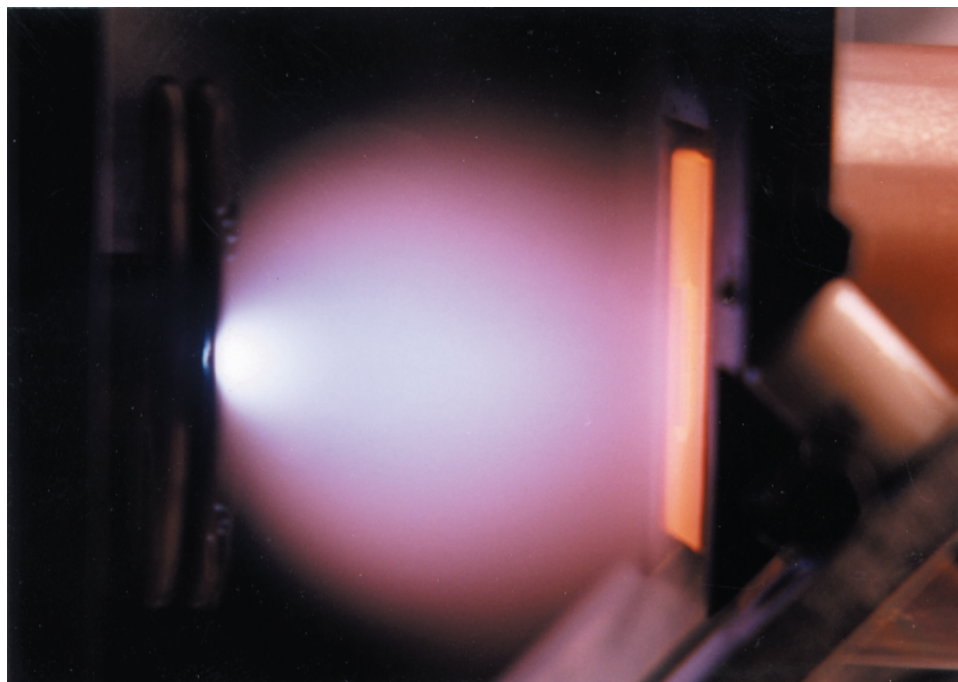


PULSED LASER DEPOSITION



Pulsed laser ablation of a $\text{YBa}_2\text{Cu}_3\text{O}_7$ target in an oxygen atmosphere

Ceramic thin films are technologically important materials because they have a wide range of interesting and useful properties. Applications for them range from solid-state electronics and optics to oxygen and wear-resistant coatings and biomaterials. Ceramic thin films are difficult to fabricate because they are typically made up of several different elements, have a complex unit cell, and have anisotropic physical and chemical properties. The Surface Modification Branch is developing a new physical vapor deposition technique called pulsed laser deposition, which allows high-quality ceramic thin film growth. Basic and applied programs include high-temperature superconductivity and ferroelectric film growth for passive and active microwave devices, ferrite films for nonreciprocal devices, and optoelectronic coatings.

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